

General Assembly Retirement System of Illinois

GASB Statement Nos. 67 and 68
Accounting and Financial Reporting for
Pensions as of June 30, 2018



November 14, 2018

The Board of Trustees
General Assembly Retirement System of Illinois
Springfield, Illinois

Dear Board Members:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the General Assembly Retirement System of Illinois ("GARS"). These calculations have been made on a basis that is consistent with our understanding of these Statements.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the General Assembly Retirement System of Illinois ("GARS") only in its entirety and only with the permission of GARS.

Our valuation and projections assume the sponsor will make the contributions required by State statute. To the extent the sponsor does not make the statutory required contribution the results contained in this report could be significantly different.

This report is based upon information, furnished to us by GARS, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not audited.

This report complements the actuarial valuation report that was provided to GARS and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2018, for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

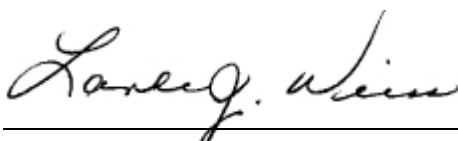
To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the General Assembly Retirement System of Illinois. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The signing actuaries are independent of the plan sponsor.

Alex Rivera and Lance J. Weiss are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,

By 
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Auditor's Note – This information is intended to assist in preparation of the financial statements of the General Assembly Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.



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SECTION A

EXECUTIVE SUMMARY

Executive Summary as of June 30, 2018

	2018
Actuarial Valuation Date	June 30, 2018
Measurement Date of the Net Pension Liability	June 30, 2018
Plan's Fiscal Year Ending Date (Reporting Date) for GASB Statement No. 67	June 30, 2018
Employer's Fiscal Year Ending Date (Reporting Date) for GASB Statement No. 68	June 30, 2019

Membership

Number of	
- Retirees and Beneficiaries	417
- Inactive, Nonretired Members	68
- Active Members	132
- Total	617
Covered Payroll ^a	\$ 10,711,024

Net Pension Liability

Total Pension Liability	\$ 382,791,456
Plan Fiduciary Net Position	56,816,384
Net Pension Liability	\$ 325,975,072
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	14.84 %
Net Pension Liability as a Percentage of Covered Payroll	3,043.36 %

Development of the Single Discount Rate

Single Discount Rate Beginning of Year	6.66 %
Single Discount Rate End of Year	6.68 %
Long-Term Expected Rate of Investment Return	6.75 %
Long-Term Municipal Bond Rate Beginning of Year ^a	3.56 %
Long-Term Municipal Bond Rate End of Year ^a	3.62 %
Last year ending June 30 in the 2018 to 2117 projection period for which projected benefit payments are fully funded	2071

Total Pension Expense for Fiscal Year End June 30, 2019	\$ 29,370,579
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Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses as of June 30, 2019

	Deferred Outflows of Resources	Deferred (Inflows) of Resources
Difference between expected and actual non-investment experience	\$ 463,415	\$ -
Changes in assumptions	-	(469,510)
Net difference between projected and actual earnings on pension plan investments	1,981,778	(1,180,009)
Total	\$ 2,445,193	\$ (1,649,519)

^a Covered payroll is based on the requirements of GASB Statement No. 82.

^b Source: The rates at the beginning and end of the year are the rates for fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of June 30, 2017, and June 29, 2018, respectively. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax exempt securities.

Discussion

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state or local governments to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to GARS subsequent to the measurement date of June 30, 2018.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience. The pension expense for fiscal year ending June 30, 2019, is based on the results of the actuarial valuation as of June 30, 2018.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The *statement of fiduciary net position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *statement of changes in fiduciary net position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

Notes to Financial Statements

GASB Statement No. 68 requires the notes of the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans to include certain additional information. The list of disclosure items should include:

- A description of benefits provided by the plan;
- The type of employees and number of members covered by the pension plan;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- The pension plan's fiduciary net position and the net pension liability;
- The net pension liability using a discount rate that is 1 percent higher and 1 percent lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- The composition of the pension plan's Board and the authority under which benefit terms may be amended;
- A description of how fair value is determined;
- Information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5 percent, receivables, and insurance contracts excluded from plan assets; and
- Annual money-weighted rate of return.

Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- A comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

Discussion

General Implications of GARS Statutory Funding Policy on Future and Expected Plan Contributions and Funded Status

Given the plan's statutorily defined funding policy, if all actuarial assumptions are met (including the assumption of the plan earning 6.75 percent on the actuarial value of assets), then the following outcomes are expected:

1. The unfunded liability is not expected to be fully amortized during the lifetimes of the current members.
2. The funded status of the plan is expected to increase gradually towards a 90 percent funded ratio at 2045 and then remain level at 90 percent funded thereafter.

This statutory funding policy results in an expected crossover date in 2071 and a GASB Single Discount Rate of 6.68 percent to measure the total pension liability as of June 30, 2018. The projections in this report are strictly for the purpose of determining the GASB Single Discount Rate and are different from a funding projection for the ongoing plan.

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The GASB Statement No. 68 pension expense provided in this report is based on a measurement date of June 30, 2018, but will be used for fiscal year ending June 30, 2019.

The GASB Statement No. 68 pension expense for fiscal year ended June 30, 2018, is based on the results of the actuarial valuation as of June 30, 2017, and is provided in the June 30, 2017, GASB Statement Nos. 67 and 68 actuarial valuation report.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2018, and a measurement date of June 30, 2018.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

Discussion

For the purpose of this valuation, the expected rate of return on pension plan investments is 6.75 percent; the municipal bond rate is 3.62 percent (based on the daily rate closest to but not later than the measurement date of the Fidelity “20-Year Municipal GO AA Index”); and the resulting Single Discount Rate is 6.68 percent.

Effective Date and Transition

GASB Statements Nos. 67 and 68 are effective for fiscal years beginning after June 15, 2013, and June 15, 2014, respectively.

Recent Legislation

Public Act (“P.A.”) 100-0023, effective July 6, 2017, modified the State’s funding policy to include smoothing State contribution rate increases or decreases due to changes in actuarial assumptions, including investment return assumptions, over a five-year period in equal annual amounts beginning in fiscal year 2018. In addition, changes in actuarial or investment assumptions that increased or decreased the State contribution rate in fiscal years 2014 through 2017 are to be smoothed over a five-year period in equal annual amounts, applying only to the portion of the five-year phase-in that is applicable to fiscal years on and after 2018. The fiscal year 2018 State contribution was recertified, pursuant to P.A. 100-0023.

Changes in Assumptions

The actuarial valuation results summarized in this report involve actuarial calculations that require assumptions about future events. Most of the actuarial assumptions used for the June 30, 2018, actuarial valuation are based on an experience review for the three-year period from July 1, 2012, through June 30, 2015. At the Board’s request, GRS reviews economic assumptions on an annual basis. The economic assumptions reviewed include:

- Investment return assumption;
- General inflation; and
- Wage inflation and salary increases.

As a result of the 2018 economic assumption review, the Board approved the following changes to the economic assumptions to be used in the June 30, 2018, actuarial valuation:

- Reduced the general (price) inflation assumption from 2.75 percent to 2.50 percent; and
- Reduced the wage inflation assumption from 3.00 percent to 2.75 percent.

Pursuant to Public Act 99-0232, GARS is required to conduct an actuarial experience review once every three years. Under this schedule, an experience review for the period from July 1, 2015 through June 30, 2018, will be performed after the June 30, 2018, actuarial valuation with expected implementation of the recommended assumptions beginning with the June 30, 2019, actuarial valuation.

A summary of the actuarial assumptions and methods used in this actuarial valuation are included in Section G of this report.

SECTION B

FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the General Assembly Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Statement of Fiduciary Net Position Years Ended June 30, 2018, and 2017

	<u>2018</u>	<u>2017</u>
Assets		
Cash	\$ 4,718,266	\$ 4,535,006
Receivables		
Contributions:		
Participants	\$ 20,419	\$ 25,814
Employing state agencies	651,300	2,715,126
Other Accounts	13,016	13,437
Total Receivables	<u>\$ 684,735</u>	<u>\$ 2,754,377</u>
Investments		
Held in the Illinois State Board of Investment		
Commingled Fund at fair value	\$ 51,487,943	\$ 47,148,105
Securities lending collateral with State Treasurer	1,949,000	1,965,000
Total Investments	<u>\$ 53,436,943</u>	<u>\$ 49,113,105</u>
Capital assets, net of accumulated depreciation	<u>\$ 22,615</u>	<u>\$ 18,281</u>
Total Assets	<u>\$ 58,862,559</u>	<u>\$ 56,420,769</u>
Liabilities		
Payables		
Benefits payable	\$ -	\$ 1,631
Refunds payable	214	4,774
Administrative expenses payable	34,394	42,262
Participants' deferred service credit accounts	-	-
Due to State of Illinois	62,567	58,194
Securities lending collateral with State Treasurer	1,949,000	1,965,000
Total Liabilities	<u>\$ 2,046,175</u>	<u>\$ 2,071,861</u>
Net Position Restricted for Pensions	<u>\$ 56,816,384</u>	<u>\$ 54,348,908</u>

Statement of Changes in Fiduciary Net Position Years Ended June 30, 2018, and 2017

	<u>2018</u>	<u>2017</u>
Additions		
Contributions		
Participants	\$ 1,255,232	\$ 1,284,707
Employing state agencies and appropriations	21,155,000	21,721,000
Total Contributions	<u>\$ 22,410,232</u>	<u>\$ 23,005,707</u>
Investment Income		
Net investments income	\$ 1,029,179	\$ 1,045,862
Interest earned on cash balances	93,666	46,586
Net appreciation in fair value of investments	2,610,659	4,047,802
Net Investment Income	<u>\$ 3,733,504</u>	<u>\$ 5,140,250</u>
Total Additions	<u>\$ 26,143,736</u>	<u>\$ 28,145,957</u>
Deductions		
Benefits		
Retirement annuities	\$ 19,188,301	\$ 18,354,695
Survivors' annuities	4,094,719	4,007,831
Disability benefits	-	-
Lump-sum benefits	-	-
Total Benefits	<u>\$ 23,283,020</u>	<u>\$ 22,362,526</u>
Refunds	44,856	130,885
Administrative	348,384	355,711
Total Deductions	<u>\$ 23,676,260</u>	<u>\$ 22,849,122</u>
Net Increase in Net Position	\$ 2,467,476	\$ 5,296,835
Net Position Restricted for Pensions		
Beginning of Year	\$ 54,348,908	\$ 49,052,073
End of Year	<u>\$ 56,816,384</u>	<u>\$ 54,348,908</u>

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Auditor's Note – This information is intended to assist in preparation of the financial statements of the General Assembly Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios – Multiyear

Fiscal year ending June 30,	2018	2017	2016	2015	2014	2013
Total Pension Liability						
Service Cost Including Pension Plan Administrative Expense	\$ 3,535,911	\$ 3,879,813	\$ 3,577,188	\$ 5,957,132	\$ 5,383,133	
Interest on the Total Pension Liability	24,541,949	24,045,958	22,395,292	19,911,100	20,110,452	
Changes of Benefit Terms	-	-	-	-	-	
Difference between Expected and Actual Experience	1,197,364	2,093,742	(5,400,812)	2,366,032	12,389,130	
Changes of Assumptions	(1,213,112)	(2,430,609)	42,122,612	(70,538,690)	-	
Benefit Payments, Including Refunds of Employee Contributions	(23,327,876)	(22,493,411)	(21,983,054)	(21,466,704)	(21,045,635)	
Pension Plan Administrative Expense	(348,384)	(355,711)	(382,340)	(394,695)	(334,628)	
Net Change in Total Pension Liability	4,385,852	4,739,782	40,328,886	(64,165,825)	16,502,452	
Total Pension Liability - Beginning	378,405,604	373,665,822	333,336,936	397,502,761	381,000,309	
Total Pension Liability - Ending (a)	\$ 382,791,456	\$ 378,405,604	\$ 373,665,822	\$ 333,336,936	\$ 397,502,761	
Plan Fiduciary Net Position						
Employer Contributions	\$ 21,155,000	\$ 21,721,000	\$ 16,073,000	\$ 15,870,941	\$ 13,956,669	
Employee Contributions	1,255,232	1,284,707	1,309,697	1,487,346	1,502,605	
Pension Plan Net Investment Income	3,733,504	5,140,250	(539,494)	2,287,916	8,363,428	
Benefit Payments, Including Refunds of Employee Contributions	(23,327,876)	(22,493,411)	(21,983,054)	(21,466,704)	(21,045,635)	
Pension Plan Administrative Expense	(348,384)	(355,711)	(382,340)	(394,695)	(334,628)	
Other	-	-	-	-	-	
Net Change in Plan Fiduciary Net Position	2,467,476	5,296,835	(5,522,191)	(2,215,196)	2,442,439	
Plan Fiduciary Net Position - Beginning	54,348,908	49,052,073	54,574,264	56,789,460	54,347,021	
Plan Fiduciary Net Position - Ending (b)	56,816,384	54,348,908	49,052,073	54,574,264	56,789,460	
Net Pension Liability - Ending (a) - (b)	\$ 325,975,072	\$ 324,056,696	\$ 324,613,749	\$ 278,762,672	\$ 340,713,301	
Plan Fiduciary Net Position as a Percentage						
of Total Pension Liability	14.84 %	14.36 %	13.13 %	16.37 %	14.29 %	
Covered-Employee Payroll^a	\$ 10,711,024	\$ 10,996,284	\$ 11,297,614	\$ 11,587,285	\$ 12,754,356	
Net Pension Liability as a Percentage						
of Covered-Employee Payroll	3,043.36 %	2,946.97 %	2,873.29 %	2,405.76 %	2,671.35 %	
Single Discount Rate, Beginning of Year	6.66 %	6.60 %	6.91 %	5.11 %	5.39 %	
Single Discount Rate, End of Year	6.68 %	6.66 %	6.60 %	6.91 %	5.11 %	5.39 %
Long-Term Municipal Bond Rate	3.62 %	3.56 %	2.85 %	3.80 %	4.29 %	4.63 %
Long-Term Municipal Bond Rate Date	June 29, 2018	June 30, 2017	June 30, 2016	June 25, 2015	June 26, 2014	June 27, 2013

^aCovered payroll is based on the requirements of GASB Statement No. 82.
10 fiscal years will be built prospectively.

Schedules of Required Supplementary Information

Schedule of the Net Liability Multiyear

Last 10 Fiscal Years (which may be built prospectively)

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll^a	Net Pension Liability as a % of Covered Payroll
2014	\$ 397,502,761	\$ 56,789,460	\$ 340,713,301	14.29 %	\$ 12,754,356	2,671.35 %
2015	333,336,936	54,574,264	278,762,672	16.37 %	11,587,285	2,405.76 %
2016	373,665,822	49,052,073	324,613,749	13.13 %	11,297,614	2,873.29 %
2017	378,405,604	54,348,908	324,056,696	14.36 %	10,996,284	2,946.97 %
2018	382,791,456	56,816,384	325,975,072	14.84 %	10,711,024	3,043.36 %

^a Covered payroll is based on the requirements of GASB Statement No. 82.

Schedules of Required Supplementary Information

Schedule of Contributions Multiyear

Last 10 Fiscal Years

Fiscal Year	Actuarially Determined Contribution ^a	Actual Contribution ^b	Contribution Deficiency (Excess)	Covered Payroll ^c	Actual Contribution as a % of Covered Payroll	Statutory Contribution	Statutory Contribution Deficiency/(Excess)
7/1/08 - 6/30/09	\$ 11,129,440	\$ 8,856,422	\$ 2,273,018	\$ 14,728,000	60.13%	\$ 8,847,000	\$ (9,422)
7/1/09 - 6/30/10	12,064,078	10,411,274	1,652,804	14,775,000	70.47%	10,454,000	42,726
7/1/10 - 6/30/11	13,086,199	11,433,614	1,652,585	15,188,000	75.28%	11,039,000	(394,614)
7/1/11 - 6/30/12	13,365,820	10,502,000	2,863,820	15,263,164	68.81%	10,502,000	-
7/1/12 - 6/30/13	17,064,640	14,150,000	2,914,640	14,876,335	95.12%	14,150,000	-
7/1/13 - 6/30/14	17,110,135	13,956,669	3,153,466	12,754,356	109.43%	13,856,000	(100,669)
7/1/14 - 6/30/15	16,900,876	15,870,941	1,029,935	11,587,285	136.97%	15,809,000	(61,941)
7/1/15 - 6/30/16	17,140,656	16,073,000	1,067,656	11,297,614	142.27%	16,073,000	-
7/1/16 - 6/30/17	26,984,621	21,721,000	5,263,621	10,996,284	197.53%	21,721,000	-
7/1/17 - 6/30/18	32,082,644	21,155,000	10,927,644	10,711,024	197.51%	21,155,000	-

^a The GARS statutory funding may not conform with Actuarial Standards of Practice; therefore, the actuarially determined contribution is equal to the normal cost plus an amount to amortize the unfunded actuarial accrued liability as a level percentage of total payroll. The amortization period for fiscal years 2009 through 2016 is an open 30-year period, and a closed 20-year period for fiscal years on and after 2017. The actuarially determined contribution for each fiscal year was determined as of the valuation two years prior.

^b The actual contributions for FYE 6/30/2009 through 6/30/2017 were obtained from the System's comprehensive annual financial reports. The actual contribution for FYE 6/30/2018 was provided by the System.

^c Covered payroll for fiscal years on and after June 30, 2012, were restated to comply with the requirements of GASB Statement No. 82. For fiscal years prior to June 30, 2012, covered payroll was not restated to comply with the requirements of GASB Statement No. 82 due to system limitations.

Schedules of Required Supplementary Information

Notes to Schedule of Contributions

Actuarial Valuation Date:	June 30, 2018
Notes	Actuarially determined contribution rates and Statutory contribution rates are calculated as of June 30, which is 12 months prior to the beginning of the fiscal year in which the contributions will be made.
Methods and Assumptions Used to Determine Contribution Rates:	
Actuarial Cost Method	Projected Unit Credit
Amortization Method	<p>Statutory Contributions — The Statutory Contribution is equal to the level percentage of pay contributions determined so that the Plan attains a 90 percent funded ratio by the end of 2045. An amortization payment is not directly calculated. The amortization payment is the difference between the total statutory contribution and the employer normal cost contribution.</p> <p>Actuarially Determined Contributions — The Actuarially Determined Contribution is equal to the employer's normal cost plus a level percent of capped payroll amortization of the unfunded accrued liability. The amortization period for fiscal years 2007 through 2016 is an open-period 30 years. The Board has adopted a policy to calculate the ADC for financial reporting purposes, effective for the actuarial valuation as of June 30, 2015. Under this policy, the ADC for fiscal years ending on and after June 30, 2017, is calculated as the employer's normal cost plus a 20-year level percent of capped payroll closed-period amortization of the unfunded accrued liability. As of June 30, 2018, the remaining amortization period is 17 years.</p>
Asset Valuation Method	5-year smoothed market
Inflation	2.50 percent
Salary Increases	Salary increase rates based on age-related productivity and merit rates plus inflation.
Postretirement Benefit Increases	Postretirement benefit increases of 3.00 percent, compounded, for Tier 1 and 3.00 percent or one-half of the annual increase in the Consumer Price Index, whichever is less, simple, for Tier 2.
Investment Rate of Return	6.75 percent as of the June 30, 2018, actuarial valuation.
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the June 30, 2016, actuarial valuation pursuant to an experience study of the period July 1, 2012 to June 30, 2015.
Mortality	For post-retirement, RP-2014 White Collar Total Healthy Annuitant mortality table, sex distinct. For pre-retirement, RP-2014 White Collar Total Employee mortality table, sex distinct. Both pre and post-retirement mortality tables include generational mortality improvements using the MP-2014 two-dimensional mortality improvement scales.
Other Information:	
Notes	The statutory contribution for fiscal year ending June 30, 2018, was determined based on the results of the June 30, 2016, actuarial valuation. Similarly, the statutory contributions for fiscal years ending June 30, 2019, and June 30, 2020, were determined based on the results of the actuarial valuations performed two years prior. All other contributions are projected using current actuarial assumptions.
Methods and Assumptions Used for Accounting Purposes as of the Actuarial Valuation Date:	
Actuarial Cost Method	Entry Age Normal
Discount Rate	6.66 percent as of the June 30, 2017, actuarial valuation. 6.68 percent as of the June 30, 2018, actuarial valuation.
Asset Valuation Method	Market value

SECTION D

NOTES TO FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the General Assembly Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Sensitivity of Net Pension Liability to the Single Discount Rate Assumptions

Single Discount Rate

A Single Discount Rate of 6.68 percent was used to measure the total pension liability. This Single Discount Rate was based on an expected rate of return on pension plan investments of 6.75 percent and a municipal bond rate of 3.62 percent. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between statutory contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position and future contributions were sufficient to finance the benefit payments through the year 2071. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the year 2071, and the municipal bond rate was applied to all benefit payments after that date.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 6.68 percent, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

1% Decrease	Current Single Discount Rate Assumption	1% Increase
5.68%	6.68%	7.68%
\$ 370,134,348	\$ 325,975,072	\$ 289,173,152

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	417
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	68
Active Plan Members	<u>132</u>
Total Plan Members	617

Additional information about the member data used is included in the June 30, 2018, actuarial valuation report

SECTION E

GASB STATEMENT NO. 68 PENSION EXPENSE

Schedule of Changes in Net Pension Liability and Related Ratios

Fiscal year End 6/30

	2018	2017
A. Total Pension Liability		
1. Service Cost Including Pension Plan Administrative Expense	\$ 3,535,911	\$ 3,879,813
2. Interest on the Total Pension Liability	24,541,949	24,045,958
3. Changes of Benefit Terms	-	-
4. Difference Between Expected and Actual Experience of the Total Pension Liability	1,197,364	2,093,742
5. Changes of Assumptions	(1,213,112)	(2,430,609)
6. Benefit Payments, Including Refunds of Employee Contributions	(23,327,876)	(22,493,411)
7. Pension Plan Administrative Expense	(348,384)	(355,711)
8. Net Change in Total Pension Liability	\$ 4,385,852	\$ 4,739,782
9. Total Pension Liability – Beginning	378,405,604	373,665,822
10. Total Pension Liability – Ending	\$ 382,791,456	\$ 378,405,604
B. Plan Fiduciary Net Position		
1. Contributions – Employer	\$ 21,155,000	\$ 21,721,000
2. Contributions – Employee	1,255,232	1,284,707
3. Net Investment Income	3,733,504	5,140,250
4. Benefit Payments, Including Refunds of Employee Contributions	(23,327,876)	(22,493,411)
5. Pension Plan Administrative Expense	(348,384)	(355,711)
6. Other	-	-
7. Net Change in Plan Fiduciary Net Position	\$ 2,467,476	\$ 5,296,835
8. Plan Fiduciary Net Position – Beginning	54,348,908	49,052,073
9. Plan Fiduciary Net Position – Ending	\$ 56,816,384	\$ 54,348,908
C. Net Pension Liability	\$ 325,975,072	\$ 324,056,696
D. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	14.84%	14.36%
E. Covered-Employee Payroll	\$ 10,711,024	\$ 10,996,284
F. Net Pension Liability as a Percentage of Covered-Employee Payroll	3043.36%	2946.97%

Statement of Pension Expense under GASB Statement No. 68

Plan Year Ended June 30, 2018

Applicable to Fiscal Year Ending June 30, 2019

A. Expense

1. Service Cost Including Pension Plan Administrative Expense	\$ 3,535,911
2. Interest on the Total Pension Liability	24,541,949
3. Current-Period Benefit Changes	-
4. Employee Contributions (made negative for addition here)	(1,255,232)
5. Projected Earnings on Plan Investments (made negative for addition here)	(3,626,521)
6. Other Changes in Plan Fiduciary Net Position	-
7. Recognition of Outflow/(Inflow) of Resources due to Liabilities	610,403
8. Recognition of Outflow/(Inflow) of Resources due to Assumption Changes	5,758,717
9. Recognition of Outflow/(Inflow) of Resources due to Assets	(194,648)
10. Total Pension Expense	\$ 29,370,579

B. Reconciliation of Net Pension Liability

1. Net Pension Liability Beginning of Year	\$ 324,056,696
2. Total Pension Expense	29,370,579
3. Employer Contributions (made negative for addition here)	(21,155,000)
4. Change in Deferred Liability Experience (Inflows)/Outflows	586,961
5. Change in Deferred Assumption Changes Experience (Inflows)/Outflows	(6,971,829)
6. Change in Deferred Investment Experience (Inflows)/Outflows	87,665
7. Net Pension Liability End of Year	\$ 325,975,072

The pension expense is based on a measurement date of June 30, 2018, but will be used for fiscal year ending June 30, 2019. Our understanding is that GARS is a single employer defined benefit pension plan. If the sponsor has component units, a proportionate share allocation of the pension expense and net pension liability under paragraph 342 of GASB Statement No. 68 may be required.

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods

Plan Year Ended June 30, 2018*

A. Outflows and (Inflows) of Resources Recognized in Current and Future Pension Expenses as of Plan Year End June 30, 2018

Experience (Gain)/Loss	Original Balance	Date Established	Original Recognition Period/ Amortization Factor	Amount Recognized in Past Pension Expenses	Amount Recognized in Current Pension Expense	Deferred (Inflows) to be Recognized in Future Pension Expenses	Deferred Outflows to be Recognized in Future Pension Expenses
1. Differences Between Expected and Actual Non-Investment Experience	\$ 1,197,364	June 30, 2018	1.6314	\$ -	\$ 733,949	\$ -	\$ 463,415
	2,093,742	June 30, 2017	1.6625	1,259,394	834,348	-	-
	(5,400,812)	June 30, 2016	2.4312	(4,442,918)	(957,894)	-	-
	2,366,032	June 30, 2015	2.5786	2,366,032	-	-	-
	12,389,130	June 30, 2014	2.5786	12,389,130	-	-	-
	<u>\$ 12,645,456</u>		<u>2.1765</u>	<u>\$ 11,571,637</u>	<u>\$ 610,403</u>	<u>\$ -</u>	<u>\$ 463,415</u>
2. Assumption Changes	\$ (1,213,112)	June 30, 2018	1.6314	\$ -	\$ (743,602)	\$ (469,510)	\$ -
	(2,430,609)	June 30, 2017	1.6625	(1,462,020)	(968,588)	-	-
	42,122,612	June 30, 2016	2.4312	34,651,705	7,470,907	-	-
	(70,538,690)	June 30, 2015	2.5786	(70,538,690)	-	-	-
	-	June 30, 2014	2.5786	-	-	-	-
	<u>\$ (32,059,799)</u>		<u>2.1765</u>	<u>\$ (37,349,006)</u>	<u>\$ 5,758,717</u>	<u>\$ (469,510)</u>	<u>\$ -</u>
3. Difference Between Expected and Actual Investment Earnings	\$ (106,983)	June 30, 2018	5.0000	\$ -	\$ (21,397)	\$ (85,586)	\$ -
	(1,824,037)	June 30, 2017	5.0000	(364,807)	(364,807)	(1,094,422)	-
	4,188,248	June 30, 2016	5.0000	1,675,300	837,650	-	1,675,299
	1,532,403	June 30, 2015	5.0000	919,443	306,481	-	306,479
	(4,762,866)	June 30, 2014	5.0000	(3,810,292)	(952,574)	-	-
	<u>\$ (973,235)</u>		<u>5.0000</u>	<u>\$ (1,580,357)</u>	<u>\$ (194,648)</u>	<u>\$ (1,180,009)</u>	<u>\$ 1,981,778</u>
4. Total	<u>\$ (20,387,578)</u>			<u>\$ (27,357,725)</u>	<u>\$ 6,174,473</u>	<u>\$ (1,649,519)</u>	<u>\$ 2,445,193</u>

B. Deferred Outflows and Deferred (Inflows) of Resources by Year to be Recognized in Future Pension Expenses

Year Ending June 30	Differences Between Expected and Actual Non-Investment Experience	Assumption Changes	Differences Between Expected and Actual Investment Experience	Year Ending June 30	Deferred Outflows of Resources	Deferred (Inflows) of Resources	Net Deferred Outflows/ (Inflows) of Resources
2019	\$ 463,415	\$ (469,510)	\$ 757,925	2019	\$ 1,607,544	\$ (855,714)	\$ 751,829
2020	-	-	451,445	2020	837,649	(386,204)	451,445
2021	-	-	(386,204)	2021	-	(386,204)	(386,204)
2022	-	-	(21,397)	2022	-	(21,397)	(21,397)
2023	-	-	-	2023	-	-	-
Thereafter	-	-	-	Thereafter	-	-	-
Total	<u>\$ 463,415</u>	<u>\$ (469,510)</u>	<u>\$ 801,770</u>	Total	<u>\$ 2,445,193</u>	<u>\$ (1,649,519)</u>	<u>\$ 795,675</u>

*Based on a measurement date of June 30, 2018, but will be used for employer's fiscal year ending June 30, 2019. Employer's proportionate share of calculations of the net pension liability, pension expense and deferred inflows and outflows are outside the scope of this report.

Numbers may not add due to rounding.

SECTION F

SUMMARY OF RETIREMENT SYSTEM PLAN PROVISIONS

Summary of Retirement System Plan Provisions (as of June 30, 2018)

1. Participation. A person eligible for membership must participate in the system as a condition of employment unless an "Election Not to Participate" is filed within 24 months from the date of assuming office.
2. Member Contributions. All members of the system are required to contribute to the system the following percentage of their salaries:

Retirement Annuity	8.5%
Automatic Annuity Increase	1.0
Survivor's Annuity	<u>2.0</u>
Total	11.5%

3. Retirement Annuity – Eligibility. A member who has at least eight years of creditable service is entitled to a retirement annuity upon attainment of age 55. A member with at least four years of service but less than eight years of service is entitled to a retirement annuity upon attainment of age 62.

A member with at least eight years of service who becomes disabled while in service is entitled to a retirement annuity regardless of age.

4. Retirement Annuity – Amount. The retirement annuity is determined according to the following formula based upon the member's final rate of salary:

- 3.0% for each of the first 4 years of service, plus
- 3.5% for each of the next 2 years of service, plus
- 4.0% for each of the next 2 years of service, plus
- 4.5% for each of the next 4 years of service, plus
- 5.0% for each year of service in excess of 12

The maximum retirement annuity is 85% of the final rate of salary.

5. Automatic Increase In Retirement Annuity. (a) Annual automatic increases of 3% of the current amount of retirement annuity are provided. The initial increase is effective in the month of January or July of the year next following the year in which the first anniversary of retirement occurs, but in no event prior to attainment of age 60.

- (b) Beginning January 1, 1990, for persons who become participants prior to August 8, 2003, and who remain in service after attaining 20 years of creditable service, 3% annual automatic increases begin to accrue on January 1 next following the date the participant attains age 55 or completes 20 years of creditable service, whichever occurs later. For any person who has service credit for the entire period from January 15, 1969 through December 31, 1992, the increases shall accrue from age 50 instead of age 55. However, such increases shall not become payable until the January 1 or July 1 next following the first anniversary of retirement, or the first of the month following attainment of age 60, whichever occurs later.

Summary of Retirement System Plan Provisions (as of June 30, 2018)

6. Survivor's Annuity – Eligibility. A surviving spouse without children is eligible for survivor benefits at age 50 or over provided marriage to the member had been in effect for at least one year immediately prior to the member's death.

A surviving spouse with unmarried eligible children is eligible for a survivor's annuity benefit at any age provided the above marriage requirements have been met. When all children are disqualified because of death, marriage or attainment of age 18 or age 22 in the case of a fulltime student, the spouse's benefit is suspended if the spouse is under age 50 until the attainment of such age.

An unmarried eligible child under age 18 or under age 22 and a full-time student or over age 18 and disabled may qualify for the survivor's annuity if there is no surviving spouse or if the spouse dies. Legally adopted children are eligible for survivor benefits on the same basis as other children.

If the member dies in service as a member, the member must have at least two years of service credit for survivor's annuity eligibility. If death occurs after termination of service but before retirement, the deceased member must have at least four years of service credit for survivor's annuity eligibility.

7. Survivor's Annuity – Amount. (a) A surviving spouse is entitled to a survivor's annuity of 66 2/3% of the amount of retirement annuity to which the member was entitled on the date of death, without regard to whether the member had attained age 55 as of the time of death, subject to a minimum payment of 10% of salary.
- (b) If a surviving spouse has in his or her care eligible children, the survivor's annuity shall be the greater of the following:
- (1) 66 2/3% of the amount of retirement annuity to which the member was entitled on the date of death, or (2) 30% of the member's salary increased by 10% of salary on account of each eligible child, subject to a total payment for the surviving spouse and children of 50% of salary. If only unmarried children survive, each such child shall be entitled to an annuity of 20% of salary, subject to a maximum total payment for all children of 50% of salary.
- (c) Upon the death of a member after termination of service, or upon the death of an annuitant, the maximum total payment to a surviving spouse and eligible children, or eligible children alone if there is no surviving spouse, shall be 75% of the retirement annuity to which the member or annuitant was entitled.
- (d) Survivor's annuities are subject to annual automatic increases of 3% of the current amount of annuity.
- (e) The minimum survivor's annuity provided by the system is \$300 per month.
- (f) In the case of a proportional survivor's annuity under the Retirement Systems Reciprocal Act, if the amount payable by the system on January 1, 1993, is less than \$300 per month, the amount shall be increased as of that date by \$2 per month for each full year elapsed since the annuity began.

Summary of Retirement System Plan Provisions (as of June 30, 2018)

8. Refund of Contributions. Upon termination of service, a member is entitled to a refund of his total contributions without interest.

A member who has no eligible survivor's annuity beneficiaries, or is unmarried at the time of retirement, is entitled to a refund of his or her contributions for the survivor's annuity.

9. Retirement System Reciprocal Act. According to the provisions of the Retirement System Reciprocal Act provided in Illinois Compiled statutes 40 ILCS 5/20, a member who has pension credit in two or more participating systems may be entitled to a proportional retirement annuity if his or her combined pension credit satisfies the longest minimum retirement eligibility requirement of any such system.

In calculating the proportional retirement annuity, the earnings credits under all participating systems shall be considered in determining final average salary.

Persons Who First Become Participants on or after January 1, 2011

The following changes to the above provisions apply to persons who first become participants on or after January 1, 2011:

1. The highest salary for annuity purposes is equal to the average monthly salary obtained by dividing the participant's total salary during the 96 consecutive months of service within the last 120 months of service in which the total compensation was the highest by the number of months in that period.
2. Required contributions shall not exceed the contributions that would be due on the highest salary for annuity purposes.
3. For 2011, the final average salary is limited to the Social Security wage base of \$106,800. Limitations for future years shall automatically be increased or decreased, as applicable, by a percentage change in the Consumer Price Index-U during the preceding 12 month calendar year.
4. A participant is eligible to retire with unreduced benefits after attainment of age 67 with at least eight years of service credit. However, a participant may elect to retire at age 62 with at least eight years of service credit and receive a retirement annuity reduced by one-half of 1% for each month that his or her age is under 67.
5. The annual retirement annuity provided is equal to 3% of the participant's final average salary for each year of service. The maximum retirement annuity payable shall be 60% of the participant's final average salary.
6. Automatic annual increases are provided in the retirement annuity then being paid equal to 3% or the annual change in the Consumer Price Index for all Urban Consumers, whichever is less. Such increases are payable in the January or July next following the first anniversary of retirement, and in the same month of each year thereafter.

Summary of Retirement System Plan Provisions (as of June 30, 2018)

7. Automatic annual increases are provided in the survivor annuity then being paid equal to 3% or the annual change in the Consumer Price Index for all Urban Consumers, whichever is less. Such increases are payable (1) on each January 1 occurring on or after the commencement of the annuity if the deceased member died while receiving a retirement annuity, or (2) in other cases, on each January 1 occurring on or after the first anniversary of the commencement of the annuity.
8. The retirement annuity being paid is suspended when an annuitant accepts full-time employment in a position covered under the General Assembly Retirement System or any other Article of the Illinois Pension Code. Upon termination of the employment, the retirement annuity shall resume and, if appropriate, be recalculated.
9. Salary and COLA development for members hired on or after January 1, 2011, are shown in the table below:

Year Ending	CPI-U	COLA	Maximum Annual Pensionable Earnings
2011		3.00%	\$106,800.00
2012	3.90%	3.00%	\$110,004.00
2013	2.00%	2.00%	\$112,204.08
2014	1.20%	1.20%	\$113,550.53
2015	1.70%	1.70%	\$115,480.89
2016	0.00%	0.00%	\$115,480.89
2017	1.50%	1.50%	\$117,213.10
2018	2.20%	2.20%	\$119,791.79

SECTION G

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Valuation Methods — Calculation of the Total Pension Liability

Actuarial Cost Method – Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

- (i) The annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement;
- (ii) Each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Valuation Methods — Calculation of the Statutory Contributions, Actuarial Cost Method Adopted June 30, 1989, by Statute

The projected unit credit normal cost method is used. Under this method, the projected pension at retirement age is first calculated and the value thereof at the individual member's current or attained age is determined. The normal cost for the member for the current year is equal to the value so determined divided by the member's projected service at retirement. The normal cost for the plan for the year is the sum of the individual normal costs.

The actuarial liability at any point in time is the value of the projected pensions at that time less the value of future normal costs.

For ancillary benefits for active members, in particular death and survivor benefits, termination benefits, and the postretirement increases, the same procedure as outlined above is followed.

Estimated annual administrative expenses are added to the normal cost.

For valuation purposes, as well as projection purposes, an actuarial value of assets is used.

Appropriation Requirements Under P.A. 88-0593

The law governing the System under P.A. 88-0593 provides that:

For fiscal years 2011 through 2045, the minimum contribution to the System for each fiscal year shall be an amount determined to be sufficient to cause the total assets of the System to equal 90 percent of the total actuarial liabilities of the System by the end of fiscal year 2045. In making these determinations, the required contribution shall be calculated each year as a level-percentage-of-payroll over the years remaining to and including fiscal year 2045 and shall be determined under the projected unit credit actuarial cost method. For fiscal years 1997 through 2010, the minimum contribution to the System, as a percentage of the payroll, shall be increased in equal annual increments so that by fiscal year 2010, the contribution rate is at the same level as the contribution rate for fiscal years 2011 through 2045.

Actuarial Assumptions, Input to Discount Rates, Mortality Assumptions and Experience Studies

Most Actuarial Assumptions Adopted June 30, 2016

Actuarial assumptions are set by the Board of Trustees. Additional information regarding the rationale for the assumptions may be found in the experience review of the General Assembly Retirement System for the three-year period ending June 30, 2015, and the 2018 economic assumption review. All actuarial assumptions are expectations of future experience, not market measures.

Mortality

Post-Retirement Mortality

RP-2014 White Collar Total Healthy Annuitant mortality table, sex distinct, with rates set forward one year for males and set back one year for females and generational mortality improvement using MP-2014 two-dimensional mortality improvement scales recently released by the SOA. This assumption provides a margin for mortality improvements.

Pre-Retirement Mortality, including terminated vested members prior to attaining age 50

RP-2014 White Collar Total Employee mortality table, sex distinct and generational mortality improvement using MP-2014 two-dimensional mortality improvement scales recently released by the SOA, to reflect that experience shows active members having lower mortality rates than retirees of the same age.

Interest

6.75 percent per year, compounded annually, net of investment expenses.

General Inflation

2.50 percent per year, compounded annually.

This assumption serves as the basis for the determination of Tier Two pay cap growth and annual increases that are equal to the lesser of 3.0 percent or the annual change in the consumer price index-u during the preceding 12-month calendar year.

Marriage Assumption

75.0 percent of active and retired participants are assumed to be married.

Termination

Rates of withdrawal are assumed to be equal to five percent for all ages 20 through 65.

It is assumed that terminated employees will not be rehired. The rates apply only to employees who have not fulfilled the service requirement necessary for retirement at any given age.

Actuarial Assumptions, Input to Discount Rates, Mortality Assumptions and Experience Studies

Salary Increases

A salary increase assumption of 2.75 percent per annum, compounded annually, was used. This 2.75 percent salary increase assumption includes an inflation component of 2.50 percent per year, and a productivity/merit/promotion component of 0.25 percent per annum.

Load for Inactive Members Eligible for Deferred Vested Pension Benefits

Deferred vested liability is increased by 10 percent to account for increases in final average salary due to participation in a reciprocal system. This assumption was developed based on the average increase in actuarial liability due to reciprocal salary increases of inactive members over the period July 1, 2005, to June 30, 2011, and will be reviewed during the next experience study. Below is the analysis used to develop this assumption:

Impact of Reciprocal Salary Increases of Inactive Members

Valuation Date	Inactives Actuarial Liability	Increase in UAL Due to Inactive Member Salary Increases	Increase in UAL as a Percent of Inactives Actuarial Liability
6/30/2006	\$ 23,772,867	\$ 2,008,594	8.4%
6/30/2007	25,637,149	1,567,266	6.1%
6/30/2008	20,963,068	1,025,565	4.9%
6/30/2009	24,982,545	977,739	3.9%
6/30/2010	22,566,036	2,139,529	9.5%
6/30/2011	26,829,958	6,514,624	24.3%
Total	\$ 144,751,623	\$ 14,233,317	
Average			9.3%

Disability

No assumption for disability was assumed.

Actuarial Assumptions, Input to Discount Rates, Mortality Assumptions and Experience Studies

Population Projection

For purposes of determining the annual appropriation as a percent of total covered payroll, the size of the active group is projected to decrease from 132 members as of the valuation date, to 68 members in 2045, and ultimately reach 66 members in 2051, due to the assumption that 50 percent of future members will elect to opt out of the pension system. New entrants are assumed to enter with an average age and average pay as disclosed below. The new entrant profile is based on the averages for all current active members. New entrant pay is assumed to increase by the salary scale assumption, and is limited by the projected statutory salary cap.

New Entrant Profile				
Age Group	No.	Uncapped Salary		Capped Salary
Under 20				
20-24				
25-29	11	\$ 881,228	\$	881,228
30-34	19	1,738,584		1,670,080
35-39	27	2,178,275		2,178,275
40-44	23	1,751,261		1,751,261
45-49	19	1,590,932		1,554,182
50-54	16	1,275,546		1,275,546
55-59	14	1,081,363		1,081,363
60-64				
65-69				
70 & Over				
Total	129	\$ 10,497,189	\$	10,391,935
Avg. Salary		\$ 81,374	\$	80,558
Avg. Age				41.91
Percent Male				64.34%

Actuarial Assumptions, Input to Discount Rates, Mortality Assumptions and Experience Studies

Retirement

Employees are assumed to retire in accordance with the rates shown below. The rates apply only to employees who have fulfilled the service requirement necessary for retirement at any given age.

Retirement Rates	
Age	Males & Females
55	5.00%
56-59	15.00%
60-74	20.00%
75	100.00%

Assets

The Fiduciary Net Position is used for GASB reporting purposes. The asset valuation method is to project contributions is prescribed by statute, a description for this method can be found in the June 30, 2018, actuarial valuation report.

Expenses

As estimated and advised by GARS staff, based on current expenses and are expected to increase in relation to the projected capped payroll. Expenses are included in the service cost.

Spouse's Age

The female spouse is assumed to be four years younger than the male spouse.

Decrement Timing

All decrements are assumed to occur beginning of year.

Decrement Relativity

Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

Decrement Operation

Turnover decrements do not operate after member reaches retirement eligibility.

Eligibility Testing

Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.

Actuarial Assumptions, Input to Discount Rates, Mortality Assumptions and Experience Studies

415(b) and 401(a)(17) Limits

No explicit assumption is made with respect to these items.

Assumptions as a Result of Public Act 96-0889

Members hired after December 31, 2010, are assumed to make contributions on salary up to the final average compensation cap in a given year until this plan provision or administrative procedure is clarified.

State contributions, expressed as a percentage of pay, are calculated based upon capped pay.

Retirement rates for tier two members to account for the change in retirement age, as follows:

Retirement Rates for Tier Two Members	
Age	Male & Female
67	40.00%
68-70	30.00%
71-74	20.00%
75	100.00%
Early Retirement Rates for Tier Two Members	
Age	Males and Females
62	25.00%
63	12.00%
64	14.00%
65	16.00%
66	18.00%

Rates of withdrawal for Tier Two members are assumed to be equal to five percent for all ages 20 through 65. For Tier Two members with less than five years of service, rates of withdrawal are assumed to be equal to ten percent for all ages 20 to 65.

Miscellaneous and Technical Assumptions

Projection Methodology and Appropriation Requirements under P.A. 93-0002, P.A. 94-0004, P.A. 96-0043 and P.A. 100-0023

State Contributions under P.A. 93-0002

In general, for each year during the life of the GOB program, the state contributions to the System are to be calculated as follows:

1. Calculation of the contribution maximum
 - a. A projection of contributions will be made from the valuation date to June 30, 2045. Such projection will be based on hypothetical asset values determined using the following assumptions:
 - i) That the System had received no portion of the general obligation bond proceeds in excess of the scheduled contributions for the remainder of fiscal year 2003 and for the entirety of 2004,
 - ii) That hypothetical state contributions had been made each fiscal year from 2005 through the valuation date, based on the funding process in place prior to P.A. 93-0002 (without regard to prior state minimum requirements),
 - iii) That the actual amounts of member contributions and the actual cash outflows (benefit payments, refunds and administrative expenses) for each year prior to the valuation date were realized, and
 - iv) That the hypothetical fund earned returns in each prior fiscal year equal to the rate of total return actually earned by the retirement fund in that year.
 - b. The hypothetical asset values developed in a., above, will not exceed the actual assets of the fund.
 - c. A projection of maximum contributions for each year of the GOB program will be performed each year, by reducing the contributions produced in a., above, by the respective amount of debt service allocated to the System for each year.
2. Calculation of the contribution with GOB proceeds
 - a. The basic projection of State contributions from the valuation date through June 30, 2045, will be made, taking into account all assets of the System, including the GOB proceeds.
 - b. State contribution rates (expressed as a percentage of covered pay), in the pattern required by the funding sections of the statutes, are calculated.
 - c. In those projections, the dollars of state contributions which are added to assets each year during the GOB program are limited by the contribution maximum. Because the bonds are to be liquidated by the end of fiscal year 2033, there is no contribution maximum thereafter.

State Contributions under P.A. 94-0004

The following is an excerpt from the Illinois Compiled statutes 40 ILCS 5/2-124:

(c) Notwithstanding any other provision of this Article, the total State contribution for fiscal year 2006 is \$4,157,000.

Notwithstanding any other provision of this Article, the total State contribution for fiscal year 2007 is \$5,220,300.

Miscellaneous and Technical Assumptions

For each State fiscal years 2008 through 2010, the State contribution to the System, as a percentage of the applicable payroll, shall be increased in equal annual increments from the required State contribution for State fiscal year 2007, so that by State fiscal year 2011, the State is contributing at a rate otherwise required under this Section.

State Contributions under P.A. 96-0043

The following is an excerpt from the Illinois Compiled statutes 40 ILCS 5/2-124:

(d) For purposes of determining the required State contribution to the System, the value of the System's assets shall be equal to the actuarial value of the System's assets, which shall be calculated as follows:

As of June 30, 2008, the actuarial value of the System's assets shall be equal to the market value of the assets as of that date. In determining the actuarial value of the System's assets for fiscal years after June 30, 2008, any actuarial gains or losses from investment return incurred in a fiscal year shall be recognized in equal annual amounts over the 5-year period following that fiscal year.

(e) For purposes of determining the required State contribution to the system for a particular year, the actuarial value of assets shall be assumed to earn a rate of return equal to the system's actuarially assumed rate of return.

State Contributions under P.A. 100-0023

Public Act ("P.A.") 100-0023, effective July 6, 2017, modified the State's funding policy to include smoothing State contribution rate increases or decreases due to changes in actuarial assumptions, including investment return assumptions, over a five-year period in equal annual amounts beginning in fiscal year 2018. In addition, changes in actuarial or investment assumptions that increased or decreased the State contribution rate in fiscal years 2014 through 2017 are to be smoothed over a five-year period in equal annual amounts, applying only to the portion of the five year phase-in that is applicable to fiscal years on and after 2018.

Miscellaneous and Technical Assumptions

Phase-in of the Financial Impact of Assumption Changes

Following is a table with the recognition schedule for the phase-in of actuarial assumption changes required under Public Act 100-0023. The following actuarial assumption changes were made:

1. Beginning with the June 30, 2013, actuarial valuation, there were changes to the economic and demographic assumptions.
2. Beginning with the June 30, 2015, actuarial valuation, there were changes to the new entrant population assumptions.
3. Beginning with the June 30, 2016, actuarial valuation, there were changes to the economic and demographic assumptions.
4. Beginning with the June 30, 2018, actuarial valuation, there were changes to the economic assumptions.

Valuation Year Ending June 30,	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Applicable Fiscal Year Ending June 30,	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
\$ in Millions After Impact of GOB Proceeds										
Contribution Before Assumption Change										
(1) Contribution Dollar	\$ 14.562	\$ -	\$ 16.207	\$ 23.261	\$ -	\$ 25.579				
(2) Contribution Rate	108.440%	0.000%	140.241%	221.533%	0.000%	255.982%				
Contribution After Assumption Change										
(3) Contribution Dollar	\$ 15.809	\$ -	\$ 21.721	\$ 26.679	\$ -	\$ 26.088				
(4) Contribution Rate	122.168%	0.000%	194.949%	255.539%	0.000%	261.124%				
(5) Assumption Change Impact as a Percentage of Capped Payroll [(4) - (2)]	13.728%	0.000%	54.708%	34.006%	0.000%	5.142%				
(6) Assumption Change Impact Recognized This Year (5-year Recognition)										
(6a) From This Year	2.746%	0.000%	10.942%	6.801%	0.000%	1.028%				
(6b) From One Year Ago	0.000%	2.746%	0.000%	10.942%	6.801%	0.000%	1.028%			
(6c) From Two Years Ago	0.000%	0.000%	2.746%	0.000%	10.942%	6.801%	0.000%	1.028%		
(6d) From Three Years Ago	0.000%	0.000%	0.000%	2.746%	0.000%	10.942%	6.801%	0.000%	1.028%	
(6e) From Four Years Ago	0.000%	0.000%	0.000%	0.000%	2.744%	0.000%	10.940%	6.802%	0.000%	1.030%
(6f) Total Recognized Assumption Change Impact	2.746%	2.746%	13.688%	20.489%	20.487%	18.771%	18.769%	7.830%	1.028%	1.030%

SECTION H

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

GASB Statements Nos. 67 and 68 include a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the Fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 6.75 percent; the municipal bond rate is 3.62 percent; and the resulting Single Discount Rate is 6.68 percent.

The sponsor finances benefit using a funding policy defined in state statute. Sponsor contributions are calculated as a level percentage of capped payroll contributions needed to attain a funded status of 90 percent in 2045 under the Projected Unit Credit cost method. After 2045, the sponsor makes a contribution such that the funded status remains at 90 percent. The statutory contribution does not explicitly separate projected employer contributions between current and future plan members.

For purposes of developing the Single Discount Rate, we have projected actuarial liabilities on an Entry Age Normal basis, and compared against projected market value of assets. We have assumed the actuarial liability for future members will be fully financed, to the extent that assets are available, and any remaining asset will be assigned to current plan members. Based on this assignment of assets and employer contributions, plan assets assigned to current plan members are projected to be depleted by 2071.

The tables in this section provide background for the development of the Single Discount Rate.

The following tables show the assignment of assets and employer contributions and the projection of assets for current members as of the valuation date. Our projections assume the sponsor will make the required statutory contributions. The projections are based on the statutory funding projections performed during the June 30, 2018, actuarial valuation.

Total administrative expenses are assumed to increase at the same rate of projected capped payroll increases. Total administrative expenses are allocated between current and future hires by total payroll.

The projections in this report are strictly for the purpose of determining the GASB Single Discount Rate and are different from a funding projection for the ongoing plan.

Projection of Funded Status and Assignment of Assets

PYE 6/30	Open Group EAN Actuarial Liability	Closed Group EAN Actuarial Liability	Future Member EAN Actuarial Liability	Open Group Assets	Future Member Assigned Assets	Closed Group Assigned Assets	Funded Ratio Current Members	Funded Ratio Future Members
	(a)	(b)	(c)=(a)-(b)	(d)	(e)=min[(c),(d)]	(f)=(d)-(e)	(g)=(f)/(b)	(h)=(e)/(c)
2018	\$ 379,996,027	\$ 379,996,027	\$ -	\$ 56,816,384	\$ -	\$ 56,816,384	14.95%	0.00%
2019	382,314,408	382,314,408	-	59,174,967	-	59,174,967	15.48%	0.00%
2020	383,681,819	383,562,023	119,797	63,446,875	119,797	63,327,078	16.51%	100.00%
2021	384,247,606	383,925,222	322,383	68,507,698	322,383	68,185,314	17.76%	100.00%
2022	383,909,289	383,293,816	615,473	73,304,248	615,473	72,688,775	18.96%	100.00%
2023	382,795,196	381,800,078	995,118	77,332,093	995,118	76,336,975	19.99%	100.00%
2024	380,773,056	379,310,996	1,462,060	80,717,495	1,462,060	79,255,435	20.89%	100.00%
2025	377,983,783	375,982,376	2,001,407	83,155,549	2,001,407	81,154,142	21.58%	100.00%
2026	374,537,269	371,889,922	2,647,347	85,159,586	2,647,347	82,512,239	22.19%	100.00%
2027	370,429,836	367,049,181	3,380,655	86,722,653	3,380,655	83,341,998	22.71%	100.00%
2028	365,692,936	361,476,300	4,216,636	87,752,418	4,216,636	83,535,782	23.11%	100.00%
2029	360,320,413	355,150,589	5,169,824	88,592,678	5,169,824	83,422,854	23.49%	100.00%
2030	354,460,084	348,218,135	6,241,949	89,302,401	6,241,949	83,060,452	23.85%	100.00%
2031	348,139,474	340,709,786	7,429,688	89,912,019	7,429,688	82,482,331	24.21%	100.00%
2032	341,438,154	332,704,242	8,733,913	90,632,696	8,733,913	81,898,784	24.62%	100.00%
2033	334,369,750	324,198,939	10,170,810	91,987,275	10,170,810	81,816,465	25.24%	100.00%
2034	326,894,824	315,171,582	11,723,242	94,579,691	11,723,242	82,856,449	26.29%	100.00%
2035	319,156,749	305,747,188	13,409,562	98,018,826	13,409,562	84,609,265	27.67%	100.00%
2036	311,218,759	295,984,119	15,234,640	102,447,343	15,234,640	87,212,703	29.47%	100.00%
2037	303,058,544	285,862,409	17,196,134	107,927,504	17,196,134	90,731,369	31.74%	100.00%
2038	294,730,914	275,434,936	19,295,978	114,593,187	19,295,978	95,297,210	34.60%	100.00%
2039	286,356,165	264,822,287	21,533,878	122,650,628	21,533,878	101,116,750	38.18%	100.00%
2040	277,947,073	254,046,396	23,900,677	132,210,300	23,900,677	108,309,623	42.63%	100.00%
2041	269,650,938	243,243,229	26,407,709	143,512,719	26,407,709	117,105,011	48.14%	100.00%
2042	261,487,526	232,418,459	29,069,067	157,126,876	29,069,067	128,057,809	55.10%	100.00%
2043	253,487,218	221,625,183	31,862,036	172,796,135	31,862,036	140,934,100	63.59%	100.00%
2044	245,742,647	210,957,708	34,784,939	190,741,076	34,784,939	155,956,137	73.93%	100.00%
2045	238,212,730	200,355,333	37,857,397	211,524,642	37,857,397	173,667,245	86.68%	100.00%
2046	231,000,008	189,921,876	41,078,132	204,974,705	41,078,132	163,896,573	86.30%	100.00%
2047	224,102,053	179,687,445	44,414,608	198,704,478	44,414,608	154,289,871	85.87%	100.00%
2048	217,522,192	169,634,937	47,887,255	192,714,775	47,887,255	144,827,520	85.38%	100.00%
2049	211,326,667	159,834,522	51,492,145	187,065,369	51,492,145	135,573,224	84.82%	100.00%
2050	205,550,163	150,326,027	55,224,137	181,788,536	55,224,137	126,564,400	84.19%	100.00%
2051	200,206,897	141,130,254	59,076,642	176,897,982	59,076,642	117,821,340	83.48%	100.00%
2052	195,272,044	132,259,163	63,012,881	172,380,804	63,012,881	109,367,923	82.69%	100.00%
2053	190,732,437	123,678,758	67,053,679	168,215,695	67,053,679	101,162,016	81.79%	100.00%
2054	186,546,751	115,347,005	71,199,746	164,363,263	71,199,746	93,163,517	80.77%	100.00%
2055	182,734,110	107,292,381	75,441,730	160,841,271	75,441,730	85,399,541	79.60%	100.00%
2056	179,337,722	99,561,574	79,776,148	157,689,315	79,776,148	77,913,167	78.26%	100.00%
2057	176,355,302	92,157,434	84,197,868	154,905,434	84,197,868	70,707,566	76.72%	100.00%
2058	173,776,196	85,082,320	88,693,876	152,480,549	88,693,876	63,786,673	74.97%	100.00%
2059	171,579,429	78,313,065	93,266,364	150,395,441	93,266,364	57,129,078	72.95%	100.00%
2060	169,781,700	71,876,085	97,905,615	148,665,881	97,905,615	50,760,267	70.62%	100.00%
2061	168,382,207	65,772,426	102,609,780	147,291,143	102,609,780	44,681,363	67.93%	100.00%
2062	167,380,477	60,002,092	107,378,385	146,270,660	107,378,385	38,892,275	64.82%	100.00%
2063	166,776,679	54,566,269	112,210,410	145,604,640	112,210,410	33,394,230	61.20%	100.00%
2064	166,568,000	49,465,221	117,102,779	145,290,696	117,102,779	28,187,917	56.99%	100.00%
2065	166,752,795	44,696,691	122,056,104	145,327,409	122,056,104	23,271,305	52.06%	100.00%
2066	167,326,065	40,256,936	127,069,129	145,710,238	127,069,129	18,641,110	46.31%	100.00%
2067	168,282,512	36,139,701	132,142,812	146,434,454	132,142,812	14,291,642	39.55%	100.00%
2068	169,614,797	32,337,565	137,277,231	147,493,318	137,277,231	10,216,087	31.59%	100.00%
2069	171,313,133	28,840,379	142,472,753	148,877,976	142,472,753	6,405,223	22.21%	100.00%
2070	173,366,316	25,636,352	147,729,964	150,578,315	147,729,964	2,848,351	11.11%	100.00%
2071	175,762,374	22,712,154	153,050,220	152,583,492	152,583,492	-	0.00%	99.70%
2072	178,489,572	20,053,336	158,436,236	154,882,873	154,882,873	-	0.00%	97.76%

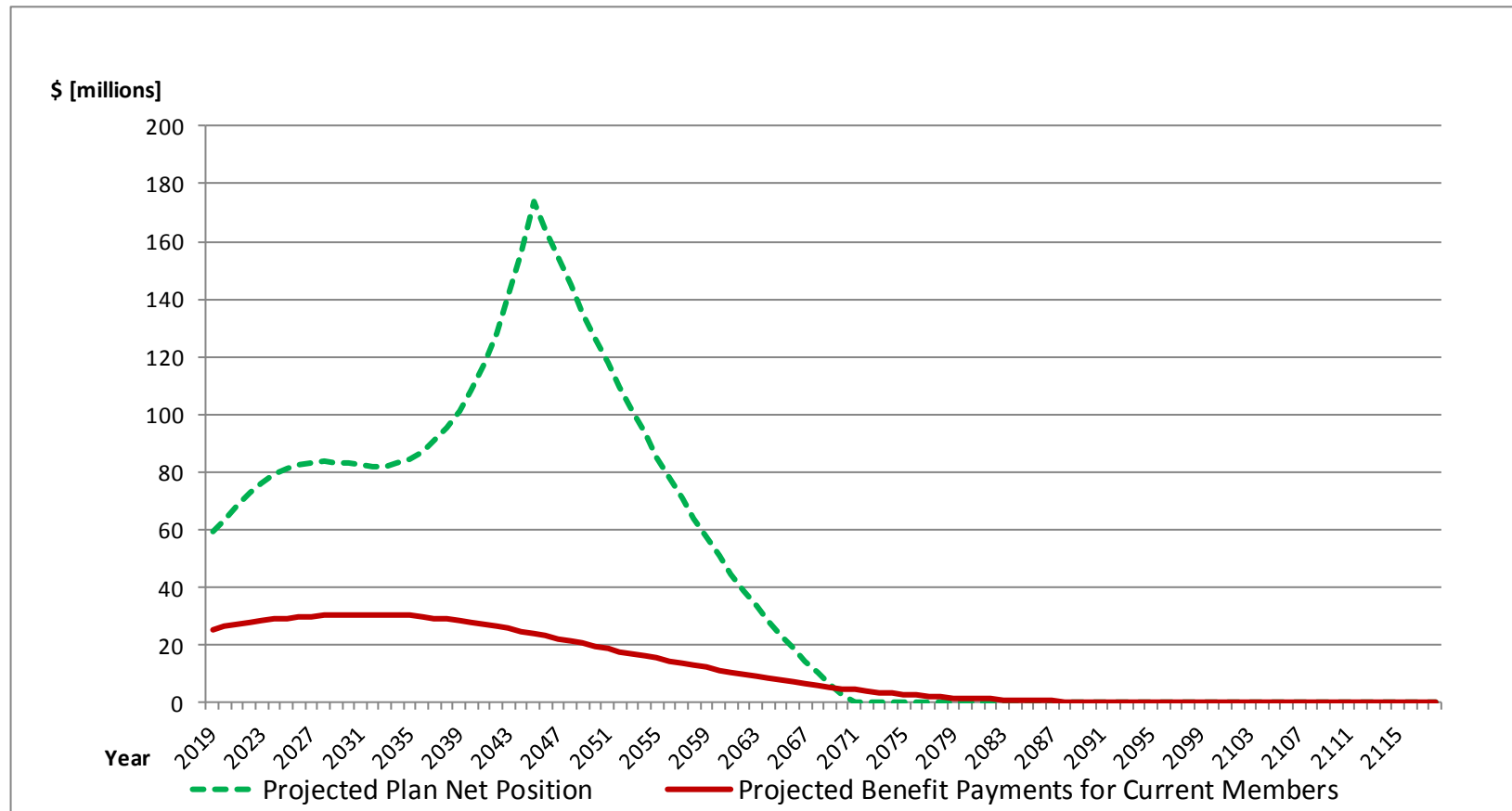
Current Member Projection of Assets and Assignment of Employer Contributions

PYE 6/30	Assets (boy)	Member Contributions	Administrative Expenses	Benefit Payments	Assigned Employer Contribution	Income on Cash Flow	Income on Assigned Contribution	Total Investment Income	Assets (eoy)
2019	\$ 56,816,384	\$ 1,172,951	\$ 396,700	\$ 25,426,738	\$ 23,221,408	\$ 3,016,736	\$ 770,926	\$ 3,787,662	\$ 59,174,967
2020	59,174,967	1,063,836	359,797	26,245,567	25,694,258	3,146,359	853,022	3,999,381	63,327,078
2021	63,327,078	971,019	328,405	26,902,719	26,825,010	3,402,771	890,561	4,293,332	68,185,314
2022	68,185,314	880,811	297,896	27,635,156	26,956,376	3,704,404	894,922	4,599,326	72,688,775
2023	72,688,775	801,139	270,951	28,205,066	26,457,018	3,987,716	878,344	4,866,061	76,336,975
2024	76,336,975	729,844	246,838	28,856,839	26,211,339	4,210,765	870,188	5,080,953	79,255,435
2025	79,255,435	658,871	222,835	29,327,408	25,551,227	4,390,580	848,273	5,238,853	81,154,142
2026	81,154,142	599,907	202,893	29,712,336	25,327,892	4,504,668	840,859	5,345,526	82,512,239
2027	82,512,239	553,052	187,046	30,035,260	25,081,737	4,584,589	832,686	5,417,276	83,341,998
2028	83,341,998	507,262	171,560	30,310,212	24,717,244	4,630,464	820,586	5,451,049	83,535,782
2029	83,535,782	465,346	157,383	30,563,096	24,688,351	4,634,228	819,626	5,453,854	83,422,854
2030	83,422,854	425,019	143,744	30,638,527	24,556,391	4,623,215	815,246	5,438,460	83,060,452
2031	83,060,452	388,312	131,330	30,661,141	24,418,185	4,597,195	810,657	5,407,853	82,482,331
2032	82,482,331	355,549	120,249	30,575,077	24,386,321	4,560,310	809,599	5,369,909	81,898,784
2033	81,898,784	324,389	109,711	30,469,735	24,824,847	4,523,733	824,158	5,347,891	81,816,465
2034	81,816,465	295,104	99,806	30,359,249	25,825,360	4,521,201	857,374	5,378,575	82,856,449
2035	82,856,449	268,401	90,775	30,094,191	26,199,957	4,599,613	869,810	5,469,423	84,609,265
2036	84,609,265	240,142	81,218	29,755,994	26,589,239	4,728,535	882,734	5,611,269	87,212,703
2037	87,212,703	215,798	72,984	29,414,728	26,979,818	4,915,062	895,701	5,810,762	90,731,369
2038	90,731,369	190,583	64,456	29,007,580	27,373,005	5,165,534	908,754	6,074,289	95,297,210
2039	95,297,210	168,207	56,889	28,471,130	27,766,487	5,491,047	921,817	6,412,864	101,116,750
2040	101,116,750	149,915	50,702	27,899,472	28,155,943	5,902,442	934,747	6,837,189	108,309,623
2041	108,309,623	128,676	43,519	27,197,088	28,548,720	6,410,813	947,787	7,358,599	117,105,011
2042	117,105,011	113,423	38,361	26,486,658	29,361,860	7,027,752	974,782	8,002,534	128,057,809
2043	128,057,809	97,504	32,977	25,728,705	29,760,570	7,791,879	988,019	8,779,898	140,934,100
2044	140,934,100	83,000	28,071	24,884,670	30,161,711	8,688,731	1,001,336	9,690,067	155,956,137
2045	155,956,137	71,437	24,161	24,109,944	31,015,897	9,728,185	1,029,694	10,757,879	173,667,245
2046	173,667,245	60,306	20,396	23,241,520	2,399,023	10,952,271	79,645	11,031,916	163,896,573
2047	163,896,573	51,253	17,334	22,358,120	2,318,642	10,321,879	76,976	10,398,856	154,289,871
2048	154,289,871	43,987	14,877	21,502,963	2,235,624	9,701,658	74,220	9,775,878	144,827,520
2049	144,827,520	35,652	12,058	20,594,081	2,151,813	9,092,940	71,438	9,164,378	135,573,224
2050	135,573,224	28,755	9,725	19,665,956	2,070,429	8,498,936	68,736	8,567,672	126,564,400
2051	126,564,400	23,460	7,934	18,738,499	1,992,258	7,921,515	66,141	7,987,655	117,821,340
2052	117,821,340	19,884	6,725	17,820,896	1,928,552	7,361,743	64,026	7,425,769	109,367,923
2053	109,367,923	17,153	5,801	16,956,814	1,858,104	6,819,764	61,687	6,881,451	101,162,016
2054	101,162,016	13,619	4,606	16,151,839	1,792,313	6,292,512	59,503	6,352,015	93,163,517
2055	93,163,517	9,605	3,248	15,337,082	1,729,750	5,779,574	57,426	5,837,000	85,399,541
2056	85,399,541	6,873	2,324	14,495,816	1,666,203	5,283,375	55,316	5,338,691	77,913,167
2057	77,913,167	4,892	1,654	13,673,322	1,605,864	4,805,307	53,313	4,858,620	70,707,566
2058	70,707,566	3,555	1,202	12,870,341	1,550,076	4,345,557	51,461	4,397,018	63,786,673
2059	63,786,673	2,713	918	12,111,586	1,498,866	3,903,568	49,761	3,953,329	57,129,078
2060	57,129,078	1,970	666	11,347,458	1,449,684	3,479,533	48,128	3,527,661	50,760,267
2061	50,760,267	1,530	517	10,603,988	1,403,176	3,074,311	46,584	3,120,895	44,681,363
2062	44,681,363	1,046	354	9,882,256	1,359,411	2,687,935	45,131	2,733,066	38,892,275
2063	38,892,275	515	174	9,181,294	1,318,698	2,320,431	43,779	2,364,210	33,394,230
2064	33,394,230	214	72	8,502,126	1,281,281	1,971,854	42,537	2,014,391	28,187,917
2065	28,187,917	174	59	7,847,011	1,246,718	1,642,176	41,390	1,683,566	23,271,306
2066	23,271,306	142	48	7,217,255	1,215,404	1,331,211	40,350	1,371,561	18,641,110
2067	18,641,110	115	39	6,614,968	1,187,339	1,038,668	39,418	1,078,086	14,291,642
2068	14,291,642	-	-	6,041,010	1,162,723	764,131	38,601	802,732	10,216,087
2069	10,216,087	-	-	5,497,461	1,141,621	507,076	37,901	544,977	6,405,223
2070	6,405,223	-	-	4,985,247	1,124,205	266,848	37,322	304,170	2,848,352
2071	2,848,352	-	-	4,505,087	1,562,174	42,700	51,862	94,562	-
2072	-	-	-	4,057,193	4,057,193	(134,694)	134,694	-	-

Development of Single Discount Rate

PYE 6/30	Benefit Payments	Discount Rate	Discounted Benefit Payment	Single Discount Rate	Discounted Benefit Payment
2019	\$ 25,426,738	6.75%	\$ 24,609,722	6.68%	\$ 24,618,262
2020	26,245,567	6.75%	23,796,010	6.68%	23,820,792
2021	26,902,719	6.75%	22,849,488	6.68%	22,889,162
2022	27,635,156	6.75%	21,987,423	6.68%	22,040,889
2023	28,205,066	6.75%	21,021,885	6.68%	21,087,631
2024	28,856,839	6.75%	20,147,696	6.68%	20,224,739
2025	29,327,408	6.75%	19,181,495	6.68%	19,268,208
2026	29,712,336	6.75%	18,204,454	6.68%	18,299,445
2027	30,035,260	6.75%	17,238,695	6.68%	17,340,675
2028	30,310,212	6.75%	16,296,490	6.68%	16,404,276
2029	30,563,096	6.75%	15,393,400	6.68%	15,505,970
2030	30,638,527	6.75%	14,455,636	6.68%	14,571,456
2031	30,661,141	6.75%	13,551,575	6.68%	13,669,633
2032	30,575,077	6.75%	12,659,050	6.68%	12,778,197
2033	30,469,735	6.75%	11,817,738	6.68%	11,937,247
2034	30,359,249	6.75%	11,030,338	6.68%	11,149,619
2035	30,094,191	6.75%	10,242,656	6.68%	10,360,606
2036	29,755,994	6.75%	9,487,166	6.68%	9,603,077
2037	29,414,728	6.75%	8,785,348	6.68%	8,898,858
2038	29,007,580	6.75%	8,115,920	6.68%	8,226,487
2039	28,471,130	6.75%	7,462,135	6.68%	7,569,046
2040	27,899,472	6.75%	6,849,935	6.68%	6,952,898
2041	27,197,088	6.75%	6,255,255	6.68%	6,353,687
2042	26,486,658	6.75%	5,706,659	6.68%	5,800,481
2043	25,728,705	6.75%	5,192,838	6.68%	5,281,877
2044	24,884,670	6.75%	4,704,905	6.68%	4,788,899
2045	24,109,944	6.75%	4,270,191	6.68%	4,349,442
2046	23,241,520	6.75%	3,856,095	6.68%	3,930,387
2047	22,358,120	6.75%	3,474,966	6.68%	3,544,374
2048	21,502,963	6.75%	3,130,731	6.68%	3,195,480
2049	20,594,081	6.75%	2,808,807	6.68%	2,868,888
2050	19,665,956	6.75%	2,512,620	6.68%	2,568,147
2051	18,738,499	6.75%	2,242,738	6.68%	2,293,892
2052	17,820,896	6.75%	1,998,046	6.68%	2,045,037
2053	16,956,814	6.75%	1,780,952	6.68%	1,824,103
2054	16,151,839	6.75%	1,589,140	6.68%	1,628,773
2055	15,337,082	6.75%	1,413,562	6.68%	1,449,823
2056	14,495,816	6.75%	1,251,547	6.68%	1,284,542
2057	13,673,322	6.75%	1,105,886	6.68%	1,135,830
2058	12,870,341	6.75%	975,121	6.68%	1,002,219
2059	12,111,586	6.75%	859,611	6.68%	884,112
2060	11,347,458	6.75%	754,452	6.68%	776,494
2061	10,603,988	6.75%	660,441	6.68%	680,209
2062	9,882,256	6.75%	576,572	6.68%	594,241
2063	9,181,294	6.75%	501,803	6.68%	517,540
2064	8,502,126	6.75%	435,300	6.68%	449,263
2065	7,847,011	6.75%	376,355	6.68%	388,697
2066	7,217,255	6.75%	324,263	6.68%	335,129
2067	6,614,968	6.75%	278,410	6.68%	287,940
2068	6,041,010	6.75%	238,177	6.68%	246,500
2069	5,497,461	6.75%	203,041	6.68%	210,282
2070	4,985,247	6.75%	172,481	6.68%	178,756
2071	4,505,087	6.75%	146,012	6.68%	151,430
2072	4,057,193	3.62%	605,332	6.68%	127,840
2073	3,641,721	3.62%	524,362	6.68%	107,568
2074	3,258,173	3.62%	452,746	6.68%	90,216
2075	2,905,508	3.62%	389,636	6.68%	75,416
2076	2,582,329	3.62%	334,199	6.68%	62,833
2086	634,059	3.62%	57,503	6.68%	8,084
2096	84,354	3.62%	5,361	6.68%	564
2106	4,503	3.62%	201	6.68%	16
2111	547	3.62%	20	6.68%	1
2117	17	3.62%	1	6.68%	0
Total Present Value			\$ 399,005,302		\$ 399,005,302

Projection of Plan Net Position and Benefit Payments



SECTION I

GLOSSARY OF TERMS

Glossary of Terms

<i>Accrued Service</i>	Service credited under the system that was rendered before the date of the actuarial valuation.
<i>Actuarial Accrued Liability (AAL)</i>	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
<i>Actuarial Assumptions</i>	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
<i>Actuarial Cost Method</i>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
<i>Actuarial Equivalent</i>	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
<i>Actuarial Gain (Loss)</i>	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
<i>Actuarial Present Value (APV)</i>	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
<i>Actuarial Valuation</i>	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.
<i>Actuarial Valuation Date</i>	The date as of which an actuarial valuation is performed.
<i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i>	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

Glossary of Terms

<i>Amortization Method</i>	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
<i>Amortization Payment</i>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<i>Cost-of-Living Adjustments</i>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i>	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
<i>Covered-Employee Payroll</i>	The payroll of employees that are provided with pensions through the pension plan.
<i>Deferred Inflows and Outflows</i>	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
<i>Deferred Retirement Option Program (DROP)</i>	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.
<i>Discount Rate</i>	<p>For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically:</p> <ol style="list-style-type: none">1. The benefit payments to be made while the pension plans’ fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

Glossary of Terms

<i>Entry Age Actuarial Cost Method (EAN)</i>	The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit ages(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.
<i>Fiduciary Net Position</i>	The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.
<i>GASB</i>	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
<i>Long-Term Expected Rate of Return</i>	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
<i>Money-Weighted Rate of Return</i>	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.
<i>Multiple-Employer Defined Benefit Pension Plan</i>	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
<i>Municipal Bond Rate</i>	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
<i>Net Pension Liability (NPL)</i>	The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.
<i>Non-Employer Contributing Entities</i>	Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contributing entities.
<i>Normal Cost</i>	The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.

Glossary of Terms

<i>Other Postemployment Benefits (OPEB)</i>	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
<i>Real Rate of Return</i>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<i>Service Cost</i>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<i>Total Pension Expense</i>	<p>The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year:</p> <ol style="list-style-type: none">1. Service Cost2. Interest on the Total Pension Liability3. Current-Period Benefit Changes4. Employee Contributions (made negative for addition here)5. Projected Earnings on Plan Investments (made negative for addition here)6. Pension Plan Administrative Expense7. Other Changes in Plan Fiduciary Net Position8. Recognition of Outflow (Inflow) of Resources due to Liabilities9. Recognition of Outflow (Inflow) of Resources due to Assets
<i>Total Pension Liability (TPL)</i>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<i>Unfunded Actuarial Accrued Liability (UAAL)</i>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<i>Valuation Assets</i>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.